



## Authorizations and Permits for Protected Species (APPS)

File #: 15575

Title: Marine mammal and sea turtle surveys to asses

### Applicant Information

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### Project Information

**File Number:** 15575

**Application Status:** **Application Complete**

**Project Title:** Marine mammal and sea turtle surveys to assess seasonal abundance and distribution in the Mid-Atlantic region.

**Project Status:** New

**Previous Federal or State Permit:** 14727

**Permits Requested:**

- ESA Section 10(a)(1)(A) permit (other)
- MMPA/ESA Research/Enhancement permit

**Where will activities occur?** US Locations including offshore waters

**Research Timeframe:** **Start:** 05/04/2012 **End:** 05/17/2017

**Sampling Season/Project Duration:** This project will survey for marine mammals and sea turtles for a five year period. Pinnipeds will be surveyed for on a year round basis with the major survey period ranging from November through June. Cetaceans will be surveyed for throughout the year while sea turtles will be surveyed for during the summer and fall (May through December).

**Abstract:** This project will conduct aerial surveys to assess seasonal abundance and distribution of the North Atlantic right whale (*Eubalaena glacialis*) and other protected marine mammals and sea turtles in the Mid Atlantic waters, which will enhance the survey work performed by the NEFSC Sighting Advisory System and AMAPPS surveys. Aerial Surveys will be conducted using a fixed wing aircraft, surface vessels, and land based surveys which will be conducted on foot and with remote cameras. These surveys are focused on obtaining counts of animals, distribution and to document prevalence of human interaction.

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## Project Description

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**Purpose:** This project will conduct systematic surveys in the Mid-Atlantic region for marine mammals and sea turtles. Surveys in these waters have been inconsistent, making it problematic to attribute strandings and animal mortality to any causal factors and to adequately assess human impacts to the populations. An increase in stranding could be attributed to changes in seasonal abundance and distribution. By establishing current baseline data on these animals, we can assess increases in strandings or the impacts to populations more accurately.

The North Atlantic Right Whale (*Eubalaena glacialis*) population is listed as critically endangered and may become biologically extinct within this century (Silber and Clapham, 2001). In the draft Western North Atlantic Right Whale Recovery Plan edited by Silber and Clapham, four strategies are identified to reduce the threat of extinction for the Western North Atlantic right whale. Collisions with ships and entanglement in fishing gear were listed as the leading causes of mortality associated with this species. These surveys will support efforts to document and reduce these occurrences (NMFS, 2005).

During the 2001 season the Riverhead Foundation for Marine Research and Preservation recovered four large whales with evidence of ship strike. Of these four animals one was a female right whale calf, which stranded on June 18, 2001. The remaining animals were as follows: a female fin whale (*Balaenoptera physalus*) on January 3, 2001, a female sei whale (*Balaenoptera borealis*) on May 3, 2001, and a female humpback whale (*Megaptera novaeangliae*) on July 29, 2001. As few flights were flown in the area south of Long Island during the winter and fall of 2001, it is difficult to assess why we observed a significant increase in ship struck animals.

Since 1996, the New York State Marine Mammal and Sea Turtle Rescue Program recovered 24 large whales. Of these animals four were calves, which stranded between Septembers through June. This suggests the presence of animals off the south shore of Long Island during the fall, winter and spring. All of the calves encountered were endangered: two were sperm whales (*Physeter macrocephalus*), one was a North Atlantic Right Whale (*Eubalaena glacialis*), and the fourth was a sei whale (*Balaenoptera borealis*). As calves usually do not travel alone, it is plausible that there are more animals going unreported during the fall, winter and spring in New York Waters. Reeves and Mitchell, in a publication to the International Whaling Commission (Special issue 10), reported on the whaling history and the presence of right whales in New York waters. According to this source, the Long Island right whale fishery began in November and ended in early May. Landings occurred between 1650 and 1889, with a peak in the late 1600's and early 1700's. As fishery burden progressed, the sightings and landings decreased. Many of the animals landed were females and calves similar to what we are seeing in the New York State stranding record. This presents a strong case for the need to increase our survey efforts in the New York region. If we are to evaluate the success of our management efforts we need to expand our survey efforts to these historically known Northern Right Whale habitats and migratory routes.

Pinniped Surveys:

Pinnipeds strandings have increased in number and distribution over the last decade. It is not understood how these changes relate to the wild population. By combining aerial and ship based surveys we can obtain an understanding of population and distribution of pinnipeds within this region. Aerial surveys enable researchers to cover a larger area in shorter period of time, thereby reducing the potential for recounting animals. Land based surveys will be used to develop correction factor for aerial surveys. these surveys will be structured to cover existing handout sites and identify new haul out sites. In recent years pinnipeds sightings from dedicated and opportunistic surveys have increased. This coupled with the increase in young seal pups stranding suggest that pupping of pinnipeds may be occurring in remote locations in the Mid Atlantic region.

Currently NOAA Fisheries and the Northeast Fisheries Science Center, located in Woods Hole, MA, are tasked with conducting and coordinating the North Atlantic right whale surveys. The survey area spans from New York waters in the south to St. John, NB in the North and out to the Hague line in the east. As weather is the limiting factor when conducting aerial surveys it is often difficult to cover the entire survey area on a regular basis. Due to these restrictions surveys are often flown focusing on the major areas of right whale concentrations and leaving the area in the New York Bight region under sampled. This reduces the program's ability to identify seasonal variation or shifts in distribution associated with environmental or human induced factors. With this in mind the Riverhead Foundation for Marine Research and Preservation approached the Northeast Fisheries Science Center to assess a need for this added coverage. The Northeast Fisheries Science Center, Protected Species Branch, confirmed the need for this added effort and offered technical, software and analytical support for the project.

In addition to Right whales this proposal will report on all species encountered. This is a comprehensive, multi-faceted strategy for the collection and analysis of data to aid in the accurate assessment of threatened marine mammals and sea turtles. The sea turtle species expected to be encountered are the loggerhead (*Caretta caretta*), Atlantic green (*Chelonia mydas*) and endangered Kemp's ridley (*Lepidochelys kempii*) and leatherback (*Dermochelys coriacea*) sea turtles in the mid-Atlantic region.

The Mid Atlantic region containing the New York Bight and its adjacent waters contains rich and productive habitats, which support major fisheries and a large and diverse community of several marine endangered species including four species of sea turtles (loggerhead, Atlantic green, Kemp's ridley, and leatherback). A report by the National Research Council (2010) identified inadequate information as one of the primary prohibiting factors for making accurate assessments of sea turtle populations in the United States. One of the recommendations supported by this report identifies the necessity of filling data gaps for the juvenile life stage of sea turtles through

the effective survey and assessment of regional foraging habitats and populations. Previous studies have established that New York waters are an important seasonal developmental habitat for the endangered Kemp's ridley sea turtle (Morreale 1993), and that the Northwest Atlantic is a critical developmental habitat for both the Kemp's ridley and the threatened loggerhead sea turtles (Morreale and Standora 2005; Morreale 1999; Mansfield et al. 2009). New York state sea turtle stranding data supports the long-term presence of the Atlantic green sea turtle within the neritic habitats of New York and its adjacent waters. Stranding records collected since 2000 indicate an increase to the recoveries of immature green sea turtles and warrants further assessment of the importance of estuarine waters as foraging and developmental habitats for this threatened species (DiGiovanni et al., 2008 annual report).

Since 1980 New York State has consistently collected data on stranded sea turtles with a total number of 1,321 animals documented. Data collection protocols have been standardized for the assessment of anthropogenic hazards since the mid-1990s. The program currently maintains an archive of gastro-intestinal contents and contaminant tissue samples (1980s- to present), plasma and red blood cell (2000-2010) as well as morphological data (1980s to present). Complementary to stranding data for New York State there are data available from in-water capture studies conducted during the 1990s (Reynolds & Sadove 1998). Data on the movements of immature sea turtles has been collected opportunistically via aerial surveys and satellite telemetry studies. Many of these data have not yet been analyzed. These data provide a historic foundation, from which we propose to build a comprehensive sea turtle research program that will provide the opportunity for data sharing and strengthening of existing research and knowledge of protected sea turtle species in NY and the mid-Atlantic region. The Riverhead Foundation for Marine Research and Preservation proposes to collect, analyze and make available through data sharing of baseline data on sea turtle and marine mammal strandings and sightings in NY waters. This will present an opportunity for strengthening existing research and knowledge about endangered sea turtle species in New York and the mid-Atlantic region.

**Description:** This project will cover the mid-Atlantic inshore the offshore waters and bays and estuaries. Surveys will be conducted over the Long Island Sound, Great South Bay Estuary Reserve, Peconic Bay Estuary as well as numerous wetlands throughout the region. Surveys will be conducted in coastal waters out to the continental shelf break; this would be no greater than 110 miles offshore in northern waters and 70 miles in the southern regions.

All of our efforts will have minimal impact on the area as we will follow established guidelines set for operation in and over these waterways. Our activities will have less impact on the environment than the recreational fisher or watercraft.

These surveys will not be conducted in areas covered by NEFSC unless requested by NEFSC. If we are requested to work in the Stellwagen Bank Area this would be under NEFSC permit.

The intent of this project is to conduct aerial surveys to assess the seasonal abundance and distribution of the North Atlantic right whale (*Eubalaena glacialis*) and other endangered, threatened and protected species of marine mammals and sea turtles on a bi-monthly basis from Virginia to Rhode Island, including the inshore and offshore waters. This effort will enhance the survey work performed by the Northeast Fisheries Science Center Sighting Advisory System (SAS). In addition, these surveys will cover areas not surveyed on a regular basis, such as Chesapeake Bay, VA and Long Island Sound, NY. This project will build on survey efforts conducted by Virginia Institute of Marine Science in the late 1990's and early 2000's. It will also survey areas of NY that have not been surveyed (Long Island Sound and south shore estuaries) on a regular basis. Currently there is not an abundance estimate for sea turtles in Long Island Sound and the only work done on sea turtles in New York waters was using the pound net fishery. Unfortunately, due to conflict in regulatory authority, the pound nets can no longer be used for research. This requires us to conduct aerial surveys to gather more information about the local migratory populations. These surveys will build on work conducted in Chesapeake Bay, VA and surveys conducted off New York during 2004 and 2005.

To maximize the usability and standardize data collection, this project will follow survey protocols set forth by the Northeast Fisheries Science Center (NEFSC). Surveys will be flown from a fixed-winged aircraft. All observers will have aircraft submersion egress training and aircraft safety training in accordance with NOAA AOC recommendations.

Aerial surveys: Cetaceans, Seals and Sea Turtles

The survey will be flown along predetermined track lines at an altitude of 600 -1000 feet at 100 knots. Surveys will not be flown in a sea state of Beaufort 6.0 and above or if visibility drops below 2.0 miles. Surveys will be conducted on a bi-monthly basis. Two survey methods will be used depending on target species. Seal surveys will be conducted by flying to known haul out sites and recording animals observed. To determine abundance estimates the surveys will be flown in accordance with line transect protocols and distance sampling. These methods will be modified during the surveys. The general procedure is to fly a straight line, which has been randomly generated prior to the flight, and record any animal observations made from that line. Once an animal is observed the data recorder will mark a sighting, which collects the GPS location and time. The observer will then record the angle to the animal from the aircraft, swim direction, species, group size and animal swim direction and behavior. Photo documentation will be conducted if ID is needed. It is estimated that less than half of the animals sighted would require circling for ID. During the photo ID the aircraft will not fly below 600' or circle on an animal if its behavior appears abnormal (swimming to avoid the aircraft, diving frequently). Circling for identification would not exceed six orbits. The only exception is if the aircraft is functioning in support of the disentanglement network. The aircraft will stay on station as long as requested in accordance with aircraft safety parameters.

Aerial surveys for cetaceans will be flown at no less than 600'. During cetacean surveys we will also collect data on sea turtles and pinnipeds. These flights will last four to seven hours in duration covering 400 to 700 miles of track line. Based on our effective strip width of .25 to .5 miles, the survey area will be up to 350 sq. miles. We intend to conduct bi-monthly surveys in each area.

Aerial surveys for sea turtles will be flown at no less than 600'. During cetacean surveys we will also collect data on cetaceans and pinnipeds. These flights will last four to seven hours in duration covering 400 to 700 miles of track line. Based on our effective strip width of .25 to .5 miles, the survey area will be up to 350 sq. miles. We intend to conduct bi-monthly surveys in each area.

Aerial surveys for pinnipeds will be flown at no less than 600'. During cetacean surveys we will also collect data on sea turtles and cetaceans. These flights will last four to seven hours in duration covering 400 to 700 miles

of track line. Based on our effective strip width of .25 to .5 miles, the survey area will be up to 350 sq. miles. We intend to conduct bi-monthly surveys in each area.

During each survey, environmental data will be collected (sea state, wind speed, wind direction, glare, sea surface temperature, cloud cover and visibility) and updated as changes occur throughout the flight. These data will be entered into a laptop computer in real time. National Marine Fisheries Service will provide a copy of the computer program they use on their aerial surveys. This program will record a GPS location and time every three seconds. Once an animal is sighted the data recorder will hit the sighting key and enter number of animals observed, swim direction, sighting angle (so distance from track line can be calculated), cue, animal behavior and species. After initial sighting information is collected the aircraft will break transect to obtain photo identification of the animals. Each animal will be labeled in accordance with the aerial survey protocols established by NEFSC with the first animal being labeled "A" the second "B" and so on. If there are more than 26 animals observed we will start labeling "AA" then "BB" until "ZZ" is reached, then the letters will be tripled. In the case of North Atlantic Right Whale copies of the photos will be sent to the New England Aquarium for comparison and identification in the North Atlantic Right Whale Catalog. These data will be plotted on a sighting map and forwarded to the SAS team located at the Northeast Fisheries Science Center in Woods Hole, MA. The same procedure for surveys will be followed when looking for seals and sea turtles.

#### Aerial surveys Sea Turtles:

Sea turtles have been observed during aerial surveys for years (Epperly et al., 1995). NOAA aerial marine mammal surveys have reported sea turtle sightings during each summer survey (NEFSC summary). These surveys are conducted at an altitude no less than 600'. I have recently developed a set of models for training observers to identify and estimate the size of sea turtles from the air. The unpublished results from the test conducted with NOAA Fisheries NEFSC during the summer of 2009 aerial survey, were supportive of our efforts.

Based on our observations stated above we can come up we can establish the general size of animals. Using size as a proxy we could determine adult or juvenile. If we conduct more intensive surveys detecting smaller animals is possible. We can also combine satellite tracking data to focus our survey effort.

#### Aerial Surveys Pinnipeds:

Pinnipeds strandings have increased in number and distribution over the last decade. It is not understood how these changes relate to the wild population. By combining aerial, ship based and land based surveys we can obtain an understanding of population and distribution of pinnipeds within this region. Aerial surveys enable researchers to cover a larger area in shorter period of time, thereby reducing the potential for recounting animals. Land based surveys will be used to develop correction factor for aerial surveys. These surveys will be structured to cover existing haul out sites and identify new haul out sites.

Haul out sites for seals are spread all around Long Island and the eastern Islands of the CT shoreline. These sites have been increasing over the last decade. Although many haul out sites have been identified new locations are identified opportunistically each year. Although rookeries have not been identified in New York waters my hypothesis is that pupping is occurring for gray and harbor seals on remote sites on the eastern portion of New York. These surveys will identify areas where additional conservation and protection measures may be needed.

Every effort will be made to avoid rookeries. One objective of these surveys is to identify if gray seals (*Halichoerus grypus*) are pupping on the eastern Islands of New York. Seal surveys will be flown at an altitude of 600' in accordance with the protocols stated above. Seal rookeries have not been identified in this study area to date. However, recent reports through the New York State Rescue Program suggests that some pupping could be occurring. This has been supported by aerial surveys observing larger adult animals occurring earlier in the season (gray seals) and staying later (harbor seals) in the season. Surveys are not flown directly over haul out sites to minimize impact.

#### Land based surveys:

Land based surveys will be conducted on an opportunistic basis. The intent of these surveys is to assess the impacts the public has on the pinnipeds in each haul out site around New York. Vessel surveys will be conducted from boats which are operated in accordance with safe boating practices. Animals will not be approached from a head on direction and if the animal's behavior changes (speeds up, turns away from initial heading to avoid the boat) the approach will be aborted.

Haulout sites can be accessed in a number of ways. One method is by foot as some of the sites are accessible to the public readily, such as Montauk. This site would be approached as animals vacate the haul out site and scat samples would be collected. Other sites such as Moriches and Shinnecock would be approached, by foot on the back side of the sand bar. Samples would be collected after the animals leave the sand bar and are not using the haul out site. The Gull Islands on the east end of the Long Island have a boat dock on the far side of the island so the boat would be docked and the researcher would move to the area via foot.

The intent of using the cameras is to determine the feasibility of conducting surveys remotely with wireless access. The intended sites to use cameras are Montauk Point, Shinnecock Bay, Moriches Bay, Plum Island, Gardiners Island, Great Gull Island and Little Gull Island.

Remote video camera systems will record the behavior and abundance of seals on their haul out sites. These cameras will be installed during off season, so as not to interfere with the seasonal arrival of animals in the area. Maintenance of cameras will be conducted on a monthly basis and will have minimal impact on animals hauled out.

Remote cameras will be installed prior to seals entering the haul out site. The age class is usually juveniles but more adults have been observed in recent years. As the intent of installing cameras is to understand the composition of the haul out site we must assume we will see all age classes.

The remote cameras are similar to security cameras used in department stores. The cameras inclusive of the housing used to protect them from the elements and are not bigger than two feet square. The cameras are composed of equipment purchased off the shelf items made from plastic and fiberglass. The location of cameras will vary based on each site. The closest proximity to the haul out site will be ten yards. There is no potential risk to the seals.

Collection of SCAT (fecal material) will be conducted on haul-out sites on an opportunistic basis. These sites will be approached to minimize the impacts of flushing animals on each haul-out site. Scat will be collected to determine diet (through analysis of hard parts) of wild animals and compare results to that of stranded animals and by caught animals. Fecal material will be used to assess for biotoxins, disease and stable isotope analysis. Scat samples will be collected by the Riverhead Foundation for Marine Research and Preservation (RFMRP) and stored at its rescue facility. The Riverhead Foundation is located at 467 East Main Street, Riverhead, NY 11901. The RFMRP is authorized to possess marine mammal parts through its stranding agreement with National Marine Fisheries Service.

Vessel Surveys:Pinnipeds

A majority of the haul out sites in New York waters are adjacent to regular boat traffic. Approaches to haul out sites by our vehicles will be conducted to maintain the maximum distance and impact to the seals hauled out. This project will use numerous surface based vessels. A few of the vessels currently used are a 21' Grady white and a 24" Nausett and a 22' skiff. All boat operators have taken safe boating courses.

Vessel surveys will follow the same line transect survey methods identified for cetaceans and sea turtles. These surveys will focus on pinnipeds but will report sighting of cetaceans and sea turtles. The intent of using the vessels is essentially as a platform to get to the haul out site to collect scat or install the cameras. The survey will be conducted while traveling to the seal haul out site and be in coastal waters. These survey days are usually 12 hours in duration with one third of the time being transit from and to the dock. Survey crew will include three individuals. As there is a long transit to the seal haul out sites we will conduct a survey to record sighting opportunistically. These will be opportunistic surveys to report any marine mammal and sea turtle observed while heading to the pinnipeds site. If an animal such as a right whale or observed we will approach to obtain id photos. Approaches will not be from the head direction. We will not approach within 20 yards. Id animal is exhibition avoidance behavior (changing directions erratically) we will abort efforts for photo id. Survey speed is 10 knots. Once at the haul out sites we will not approach at speeds of greater than 10 knots and will stay 20 yards off the site. We will minimize viewing time to less than 30 minutes. We will approach the haul out site to collect scat after the seals are flushed by activity of recreational boaters, kayakers, and commercial boats. Therefore, our approaches will be conducted on a vacant haul out site. If a haul out site with pups is identified in our region we will approach close enough to obtain photo documentation and then leave the area so as not to flush mom and pup. These data will then be passed on to NOAA fisheries as it will be a new discovery.

In the draft Western North Atlantic Right Whale Recovery Plan edited by Silber and Clapham 2001, four strategies are identified to reduce the threat of extinction. Collisions with ships and entanglement in fishing gear were listed as the leading causes of mortality associated with this species. These surveys will support efforts to reduce these occurrences by observing behavior and movement patterns in New York waters, record any interactions with vessels and follow the proper procedures, and document any marine pollution found in the area. The Riverhead Foundation is dedicated to the rescue, rehabilitation, and release of seals, sea turtles, whales, dolphins, and porpoises. Some of these species are critically endangered and may become extinct in our lifetime. All are protected under N.Y. State, Federal and in some cases, International Law. The Riverhead Foundation is the only organization authorized by New York State to carry on this important work in conserving the marine environment. This project will survey on a monthly basis weather permitting. In addition, we will coordinate and provide support to National Marine Fisheries Service to locate and verify sighting reports and the location of animals floating offshore within our region.

To assess our take numbers we used survey data from 2004 and 2005 season as well as report data from NOAA fisheries.Based on the criteria that all animals observed from within 1000' feet we summed our aerial survey data for pinnipeds and added 10% to account for annual population growth. Previous take numbers were assessed based on animals flushing from a haul out site. Therefore there will be a significant increase in take requests under this permit. To estimate cetacean takes the total the number of animals observed during the winter quarter of the 2005 aerial survey were used and then multiplied by 4 to represent each season and then multiplied them by 4 to account for multiple surveys in each month. For the right whale we asked for visual takes on all animals in the population as the potential exists for us to see these animals at they migrate through the area. Sea turtle numbers were derived from the preliminary summer 2010 regional abundance estimate of loggerhead turtles (Caretta caretta) in the Northwest Atlantic Ocean and continental shelf waters. The sightings from this report were used multiplied by the frequency of our surveys.

We have added takes for fin/sei as we will only id as a fin whale if we see the right side of the animal. If we cannot observe the right side of the animal with minimal circling we will abort attempt to id to species and go for the conservative fin/sei as identification. This will minimize the potential impacts on the animals. We have historically had a sighting of Beluga whales through the stranding program. A few surveys have reported beluga whales in the Gulf of Maine. To make sure any opportunistic sighting are covered under our permit we have requested a small number of takes for them.

Supplemental Information

Status of Species:	All the animals are protected under the MMPA and and ESA. The fin, sei, humpback, North Atlantic right and sperm whales are listed as endangered(Waring et al. 2009). The leatherback and Kemp's Ridley sea turtle are listed as endangered and the green and loggerhead are threatened.
Lethal Take:	Not Applicable
Anticipated Effects on Animals:	The effects are minimal as the aircraft will be approaching from 600'. The survey altitude for each group would be no less than 600' for cetaceans, 600' for pinnipeds and 600' for sea turtles. The only anticipated response would be diving to avoid the aircraft shadow. Surveys for pinnipeds could result in animals flushing from a haul out site. This has not been observed in previous operations. Vessel surveys will conduct slow approaches using identified navigation channels so will not have any more effect on the animals than is encountered from the general public. Land based surveys will use identified trails and follow park guidelines.

<b>Measures to Minimize Effects to Listed Species:</b>	When animals are located the survey aircraft will circle for photographs. If the animal appears to be showing avoidance behavior, diving to avoid the aircraft or abrupt changes in direction, our efforts we cease and and return to survey track line. Vessel and land based surveys will use telephoto lenses to maximize the distance we can stay from the animal.
<b>Resources Needed to Accomplish Objectives:</b>	These surveys will be conducted from a high fixed wing aircraft, which will be secured for these aerial surveys. Aircrews will be trained in current survey techniques and safety training. Safety equipment and computers, GPS, and cameras will be used to record and document all sightings. Remote cameras will be used to monitor some animals on known haul out sites.
<b>Disposition of Tissues:</b>	Fecal samples will be sorted for hard parts. Hard parts will be stored at the Riverhead Foundation for Marine Research and Preservation.
<b>Public Availability of Product/Publications:</b>	Data will be shared with NMFS regional office and the right whale consortium, NMFS Northeast Fisheries Science Center, the marine mammal and sea turtle stranding network and Virginia Aquarium and Marine Science Museum. Summary of survey efforts will be made available on the organizations website.

### Location/Take Information

**Location**  
**Research Area:** Atlantic Ocean **States:** CT,DE,MA,MD,NC,NJ,NY,RI,VA **Stream Name:** Atlantic Ocean  
**Location Description:** Focal area: New York Bight and surrounding waters; Research can occur off MA,RI, CT, NY, NJ, DE, MD, VA and NC.

### Take Information

Line Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Transport Record	Begin Date	End Date
1	Whale, right, North Atlantic	Western Atlantic Stock (NMFS Endangered)	Wild	All	Male and Female	350	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
2	Whale, minke	Range-wide	Wild	All	Male and Female	250	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
3	Whale, sei	Nova Scotia Stock (NMFS Endangered)	Wild	All	Male and Female	240	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
4	Whale, Bryde's	Range-wide	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
5	Whale, blue	Western North Atlantic Stock (NMFS Endangered)	Wild	All	Male and Female	100	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
6	Whale, fin	Western North Atlantic Stock (NMFS Endangered)	Wild	All	Male and Female	400	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
7	Whale, humpback	Western North Atlantic Stock (NMFS Endangered)	Wild	All	Male and Female	370	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
8	Dolphin, common, short-beaked	Western North Atlantic Stock	Wild	All	Male and Female	3660	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
9	Whale, pilot, short-finned	Western North Atlantic Stock	Wild	All	Male and Female	320	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017

10	Whale, pilot, long-finned	Western North Atlantic Stock	Wild	All	Male and Female	2070	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
11	Dolphin, Risso's	Western North Atlantic Stock	Wild	All	Male and Female	580	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
12	Dolphin, Fraser's	Western North Atlantic Stock	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
13	Dolphin, Atlantic spotted	Western North Atlantic Stock	Wild	All	Male and Female	80	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
14	Dolphin, white-beaked	Western North Atlantic Stock	Wild	All	Male and Female	200	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
15	Whale, killer	Western North Atlantic Stock	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
16	Dolphin, Atlantic white-sided	Western North Atlantic Stock	Wild	All	Male and Female	700	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
17	Dolphin, pantropical spotted	Western North Atlantic Stock	Wild	All	Male and Female	300	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
18	Dolphin, clymene	Western North Atlantic Stock	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
19	Dolphin, striped	Western North Atlantic Stock	Wild	All	Male and Female	600	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
20	Dolphin, spinner	Western North Atlantic Stock	Wild	All	Male and Female	500	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
21	Dolphin, bottlenose	Range-wide	Wild	All	Male and Female	10000	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
22	Whale, beluga	Range-wide	Wild	All	Male and Female	5	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
23	Porpoise, harbor	Gulf of Maine/Bay of Fundy Stock	Wild	All	Male and Female	700	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
24	Whale, pygmy sperm	Western North Atlantic Stock	Wild	All	Male and Female	60	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
25	Whale, dwarf sperm	Western North Atlantic Stock	Wild	All	Male and Female	40	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
26	Whale, sperm	North Atlantic Stock (NMFS Endangered)	Wild	All	Male and Female	200	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
27	Whale, Gervais' beaked	Range-wide	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
28	Whale, Sowerby's beaked	Range-wide	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	3/31/2016
29	Seal, hooded	Western North Atlantic Stock	Wild	All	Male and Female	40	24	Harass	Survey, aerial	Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017

**Details:** Repeat surveys of haulouts 2x/month

30	Seal, harbor	Western North Atlantic Stock	Wild	All	Male and Female	15000	24	Harass	Survey, aerial	Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
31	Seal, gray	Western North Atlantic Stock	Wild	All	Male and Female	15000	24	Harass	Survey, aerial	Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
32	Seal, harp	Northwest North Atlantic Stock	Wild	All	Male and Female	20	24	Harass	Survey, aerial	Observations, behavioral; Photo-id	N/A	5/4/2012	3/31/2016
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
33	Seal, hooded	Western North Atlantic Stock	Wild	All	Male and Female	300	24	Harass	Survey, vessel	Collect, scat; Observations, behavioral; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
34	Seal, harbor	Western North Atlantic Stock	Wild	All	Male and Female	15000	24	Harass	Survey, vessel	Collect, scat; Observations, behavioral; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
35	Seal, gray	Western North Atlantic Stock	Wild	All	Male and Female	3500	24	Harass	Survey, vessel	Collect, scat; Observations, behavioral; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
	<b>Details:</b> Repeat surveys of haulouts 2x/month												
36	Whale, northern bottlenose	Western North Atlantic Stock	Wild	All	Male and Female	20	1	Harass	Survey, aerial	Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
37	Seal, harp	Northwest North Atlantic Stock	Wild	All	Male and Female	70	1	Harass	Survey, vessel	Collect, scat; Observation, monitoring; Observations, behavioral; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
38	Whale, pygmy killer	Western North Atlantic Stock	Wild	All	Male and Female	20	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
39	Dolphin, unidentified	NA	Wild	All	Male and Female	3000	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
40	Whale, unidentified rorqual	NA	Wild	All	Male and Female	100	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
41	Whale, unidentified fin/sei		Wild	All	Male and Female	300	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
42	Seal, gray	Western North Atlantic Stock	Wild	All	Male and Female	1400	1	Harass/Sampling	Survey, ground	Collect, scat; Count/survey; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
43	Seal, harbor	Western North Atlantic Stock	Wild	All	Male and Female	3000	1	Harass/Sampling	Survey, ground	Collect, scat; Count/survey; Photo-id; Remote video monitoring	N/A	5/4/2012	5/17/2017
44	Turtle, green sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	475	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												

45	Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	125	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												
46	Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	80	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												
47	Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/ Subadult/ Juvenile	Male and Female	1400	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												
48	Turtle, unidentified sea	NA (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	1115	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												
50	Whale, unidentified baleen	NA	Wild	All	Male and Female	100	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
51	Pinniped, unidentified	NA	Wild	All	Male and Female	500	1	Harass	Survey, aerial	Count/survey	N/A	5/4/2012	5/17/2017
52	Whale, True's beaked	Range-wide	Wild	All	Male and Female	100	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
53	Dolphin, rough-toothed	Range-wide	Wild	All	Male and Female	100	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
54	Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Adult/ Subadult/ Juvenile	Male and Female	2	1	Harass	Other	Count/survey	N/A	5/4/2012	5/17/2017
	<b>Details:</b> aerial and vessel surveys for counts												
55	Whale, Cuvier's beaked	Western North Atlantic Stock	Wild	All	Male and Female	2	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
56	Whale, melon-headed	Western North Atlantic	Wild	All	Male and Female	2	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
57	Whale, false killer	Range-wide	Wild	All	Male and Female	2	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017
58	Whale, unidentified beaked	NA	Wild	All	Male and Female	30	1	Harass	Survey, aerial/vessel	Count/survey; Incidental harassment; Observations, behavioral; Photo-id	N/A	5/4/2012	5/17/2017

NEPA Checklist

1) If your activities will involve equipment (e.g., scientific instruments) or techniques that are new, untested,or otherwise have unknown or uncertain impacts on the biological or physical environment , please discuss

the degree to which they are likely to be adopted by others for similar activities or applied more broadly.

The aerial survey methods used in this project have been employed in studying wildlife for decades. The impacts on the animal are minimal if any. The remote cameras are a passive tool to monitor animals with the least amount of disturbance.

2) If your activities involve collecting, handling, or transporting potentially infectious agents or pathogens (e.g., biological specimens such as live animals or blood), or using or transporting hazardous substances (e.g., toxic chemicals), provide a description of the protocols you will use to ensure public health and human safety are not adversely affected, such as by spread of zoonotic diseases or contamination of food or water supplies.

All participants will use appropriate personal protection equipment and survival equipment while conducting this research.

3) Describe the physical characteristics of your project location, including whether you will be working in or near unique geographic areas such as state or National Marine Sanctuaries, Marine Protected Areas, Parks or Wilderness Areas, Wildlife Refuges, Wild and Scenic Rivers, designated Critical Habitat for endangered or threatened species, Essential Fish Habitat, etc. Discuss how your activities could impact the physical environment, such as by direct alteration of substrate during use of bottom trawls, setting nets, anchoring vessels or buoys, erecting blinds or other structures, or ingress and egress of researchers, and measures you will take to minimize these impacts.

We will fly along coastal areas at an altitude of no less than 600' so impacts on the terrestrial environment will be negligible.

4) Briefly describe important scientific, cultural, or historic resources (e.g., archeological resources, animals used for subsistence, sites listed in or eligible for listing in the National Register of Historic Places) in your project area and discuss measures you will take to ensure your work does not cause loss or destruction of such resources. If your activity will target marine mammals in Alaska or Washington, discuss measures you will take to ensure your project does not adversely affect the availability (e.g., distribution, abundance) or suitability (e.g., food safety) of these animals for subsistence uses.

All survey efforts will be conducted to minimize environmental impacts. The aerial surveys are not flown below 600' and the survey work is observational. These methods do not require direct impact on the environment. All land-based surveys will be conducted in accordance with park guidelines and use current trails.

5) Discuss whether your project involves activities known or suspected of introducing or spreading invasive species, intentionally or not, (e.g., transporting animals or tissues, discharging ballast water, use of equipment at multiple sites). Describe measures you would take to prevent the possible introduction or spread of non-indigenous or invasive species, including plants, animals, microbes, or other biological agents.

Surveys conducted for a fixed wing aircraft will not interact directly with the animals' habitat. Land-based surveys or ship-based surveys will have minimal impacts as the habitat. These studies will not explore any pristine areas not currently used by the general public.

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### Project Contacts

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**Primary Contact:** Robert Anthony DiGiovanni Jr.

**Principal Investigator:** Robert Anthony DiGiovanni Jr.

**Other Personnel:**

Name	Role(s)
Allison Chaillet	Co-Investigator
Kimberly Durham	Co-Investigator

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### Attachments

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**Contact** - Allison Chaillet: C15126T5C8205T5\_CV\_Chaillet.pdf (Added Jul 26, 2011)

**Contact** - Kimberly Durham: C13533T5C13533T5k\_CV\_Durham.pdf (Added Jul 26, 2011)

**Contact** - Robert Anthony DiGiovanni Jr.: C8205T5C8205T5Robert.pdf (Added Jul 26, 2011)  
**Project Description** - P15575T1P15575T1Applicant\_2011\_projectAREA.pdf (Added Jul 26, 2011)  
**Project Description** - P15575T1P15575T1ST\_Literature.pdf (Added Jul 26, 2011)

Status

**Application Status:** Application Complete  
**Date Submitted:** January 4, 2011  
**Date Completed:** May 19, 2011  
**FR Notice of Receipt Published:** August 17, 2011    **Number:** 0648-xa602  
**Comment Period Closed:** September 16, 2011    **Comments Received:** No    **Comments Addressed:** No  
**Last Date Archived:** May 4, 2012

- **ESA Section 10(a)(1)(A) permit (other)**
  - Current Status:** Issued    **Status Date:** May 4, 2012
  - Section 7 Consultation:** Formal Consultation
  - NEPA Analysis:** Environmental Assessment
  - Expire Date:** May 17, 2017
  - Analyst Information:**
    - 1)    Laura Morse    Phone: (301)427-8428  
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- **MMPA/ESA Research/Enhancement permit**
  - Current Status:** Issued    **Status Date:** May 4, 2012
  - Section 7 Consultation:** Formal Consultation
  - NEPA Analysis:** Environmental Assessment
  - Expire Date:** May 15, 2017
  - Analyst Information:**
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Modification Requests

Reports

